# Index to Volume 102 | July–December 2001

## titles


Adaptive Optics Comes of Age, *Govert Schilling*, 4:30
Dmitri Maksutov: The Man and His Telescopes, *Yuri Petrunin and Eduard Trigubov*, 6:52
Hot New Products of 2001, 6:32
Mission: Possible — The Promise of Pisgah, *Stuart J. Goldman*, 4:42
New Century for Asteroids, A, *Richard P. Binzel*, 1:44
Race to Measure the Cosmos, The, *Alan W. Hirshfeld*, 5:38
Sharing Mauna Kea, *David Tytell*, 2:40
Sixty Years of Hindsight, *Leif J. Robinson*, 5:30
Star Too Tough to Die, The, *Florian Kerber and Martin Asplund*, 5:48
Taking the Pulse of Neutron Stars, *Stephen M. Maurer*, 2:32
2MASS: Unveiling the Infrared Universe, *Michael Skrutskie*, 1:34
Universe Through Gravity's Lens, The, *Carolyn Collins Petersen*, 3:32
Wide Deep Field, A: Getting the Big Picture, *David Tytell*, 3:42
Wondering in the Dark, *Ken Croswell*, 6:44


## authors


*Adler, Alan*, More Pretty Doubles, 1:111
*Aguirre, Edwin L.*, Astro Imaging with Digital Cameras, 2:128
  Astronomy on the Road, 5:84
  Behind the Scenes with the Rockland Astronomy Club, 2:84
  news note, 6:25
  Northeast Astronomy Forum's Pillar, The, 2:86
*Alcaide, Antonio*, letter, 6:14
*Alexander, Bob*, letter, 4:1
*Ashford, Adrian R.*, Decade of Celebrating Astronomy in the Northeast, A, 2:83
  Dob for the Deep Sky, A, 3:49
  Saturn's Vanishing Act, 3:93
  Star Catalogs for the 21st Century, 1:65
*A. M.*, see *MacRobert, Alan*
*Asplund, Martin*, see *Kerber, Florian*
*Atkinson, Paul*, letter, 6:14
*Badillo, Victor L.*, A Flexible Virtual Planetarium, 6:63
*Beatty, J. Kelly*, Images, 3:46
  news note, 1:26, 28, 3:24, 6:18, 24, 25, 26
  see also *MacRobert, Alan; Tytell, David*
*Beatty, J. Kelly*, and *David Tytell*, news note, 5:23
*Bemus, Tom*, letter, 2:14
*Binzel, Richard P.*, A New Century for Asteroids, 1:44
*Bliss, Frank*, letter, 2:12
*Borders, Craig*, letter, 2:12
*Bortle, John E.*, A Nice Comet for the Holiday Season, 6:101
*Boschat, Michael*, letter, 6:16
*Brown, Chris*, letter, 1:18
*Castle, Paul R.*, letter, 4:12
*Cidadão, António José*, Thoughts on Super-Resolution Planetary Imaging, 6:127
*Covington, Michael A.*, letter, 3:16
*Croswell, Ken*, Wondering in the Dark, 6:44
*Deans, Paul*, book review, 4:72
  December's Annular Eclipse of the Sun, 6:104
  Full Moon Hides Saturn, The, 6:105
  Images, 6:60
*DeMidio, Rich*, letter, 5:12
*di Cicco, Dennis*, Afocal What? 2:130
  LX90 or NexStar 8? 1:61
  Meade's Newest "Go To" Telescope, 1:55
  news note, 2:28
  No Identity Crisis, 5:35
  Observer's Notebook, 2:120, 3:110, 4:119
*Dobbins, Thomas A.*, The Hargreaves Strut, 3:114
*Donnelly, Joey*, letter, 5:12
*Downey, Phillip*, and *Tytell, David*, news note, 3:21
*D. T.*, see *Tytell, David*
*Dutch, Steven I.*, letter, 5:12
*Dyer, Alan*, Observer's Notebook, 5:129
  William Optics Megrez 80 Refractor, 4:51
*English, Jayanne* and *A. Russell Taylor*, Images, 1:52
*Epstein, Lewis Carroll*, letter, 2:16
*Farinacci, Jeff A.*, Stellar Guides for Your Birthday, 5:63
*Farquhar, Robert W.*, letter, 3:16
*Ferrin, Ignacio*, letter, 4:14
*Ferris, Bill*, letter, 6:14
*Fienberg, Richard Tresch*, A Gift of the Universe, 1:79
  Spectrum, 1:8, 2:8, 3:8, 4:8, 5:8, 6:8
  Two Ultrasensitive CCD Cameras, 5:57
*Foust, Jeff*, Screen Shot, 4:62
*Freeman, Jay Reynolds*, My Favorite Deep-Sky Objects, 4:110
*French, Sue*, Small-Scope Sampler, 1:93, 2:101, 3:85, 4:93, 5:101, 6:93
*Gatewood, George G.*, book review, 2:78
*Gendler, Robert*, Color CCD Imaging with Luminance Layering, 1:133
  Imaging the Sky from the Suburbs, 5:132
*Gingrich, Mark*, and *Roger W. Sinnott*, The Crescent Moon Hides Venus, 1:100
*Goldman, Stuart J.*, Astronomy Online, 1:70, 2:70, 4:64, 5:70, 6:66
  Mission: Possible — The Promise of Pisgah, 4:42
  news note, 4:26
*Gould, Ross*, letter, 3:14
*Grossenbacher, Roger*, letter, 6:12
*G. S.*, see *Schilling, Govert*
*Gupta, Rajiv*, High-Resolution Composite Color Imaging with Films, 1:127
  *Lab* Composite-Imaging Method, The, 1:128
*Hamer, Martijn*, letter, 5:14
*Hartmann, William K.*, book review, 6:72
*Haworth, Peter*, The Lost Stars, 3:10
*Heafner, Joe*, Screen Shot, 1:68, 6:68
*Hewitt-White, Ken*, book review, 5:77
  Deep-Sky Notebook, 1:114, 3:105, 5:125, 6:113
  letter, 1:18
*Hines, Dean C.*, letter, 3:16
*Hirshfeld, Alan W.*, The Race to Measure the Cosmos, 5:38
*Holliday, Bill*, letter, 4:16
*Horne, Johnny*, The Astrovid Color PlanetCam, 2:55
*Hudgens, Ben*, letter, 4:12
*Jablonowski, Mark M.*, letter, 4:16
*Jakiel, Richard*, Deep-Sky Notebook, 4:115
*J. K. B.*, see *Beatty, J. Kelly*
*Johnson, Duane*, letter, 2:16
*Jones, Jane Houston*, Sparks Fly Under Sonoma Skies, 6:77
*J. R.*, see *Roth, Joshua*
*Kalfaoglu, Turgut*, letter, 5:14
*Kerber, Florian*, and *Martin Asplund*, The Star Too Tough to Die, 5:48
*Krupp, E. C.*, Rambling Through the Skies, 1:86, 2:92, 3:77, 4:86, 5:93, 6:86
*Lally, Raymond*, Escape from the Armchair, 5:10
*Laurentino, David*, letter, 6:16
*Leach, Sid*, letter, 2:12
*Leidt, Hans-Jürgen*, letter, 3:14
*Leonberger, George*, Texas Slim: A Multipurpose Binocular Mount, 2:124
*Levy, David H.*, Star Trails, 1:82, 2:88, 3:73, 4:82, 5:86, 6:80
*Lyons, Randy*, letter, 1:18
*Macfarlane, Alan W.*, book review, 1:76
*MacRobert, Alan*, news note, 1:24, 28, 2:18, 19, 22, 24, 28, 3:19, 22, 25, 26, 27, 4:20, 21, 22, 5:16, 17, 18, 19, 20, 23, 6:22, 27
*MacRobert, Alan*, and *J. Kelly Beatty*, news note, 1:24, 4:18
*MacRobert, Alan*, and *David Tytell*, news note, 3:18
*Malin, David*, Images, 2:52
*Maor, Eli*, letter, 2:14
*Marion, Marian*, letter, 6:14
*Marks, Joel*, letter, 5:12
*Maslikov, Sergey*, Amateur Astronomy in Russia: Past, Present, and Future, 3:66
*Mathers, David*, letter, 3:14
*Maurer, Stephen M.*, Strange Doomsdays, 2:36
  Taking the Pulse of Neutron Stars, 2:32
*McDowell, Jonathan*, Mission Update, 1:32, 2:30, 3:30, 4:28, 5:28, 6:30
*Medkeff, Jeff*, Screen Shot, 2:68
  Trio for Minor-Planet Observers, A, 4:58
*Milledge, Robert D.*, letter, 5:12
*Milsom, Francis*, An Attractive Three-Point Dobsonian, 1:120
*Morris, Randy*, letter, 3:16
*Ng, Eric Wai-Kin*, A Pioneer Hong Kong Amateur, 4:78
  Stars Through the Eyes of the Dragon, The, 4:76
*Osterbrock, Donald E.*, book review, 1:74
*Parker, Donald C.*, Observer's Notebook, 6:117
*Petersen, Carolyn Collins*, book review, 4:69, 6:74
  Images, 5:54
  Many Shapes of Macrolensing, The, 3:34
  Universe Through Gravity's Lens, The, 3:32
*Petrunin, Yuri*, and *Eduard Trigubov*, Dmitri Maksutov: The Man and His Telescopes, 6:52
  Why Maks? 6:54
*Pfannenschmidt, Ernie*, Downsizing Newtonian Secondary Mirrors, 4:122
*Phinney, E. Sterl*, book review, 3:59
*Polakis, Tom*, A Sampling of Edge-on Galaxies, 5:122
*Pushkarsky, Louis P.*, letter, 6:12
*Rao, Joe*, Leonids 2001: The Saga Continues, 5:109
*Ratledge, David*, Screen Shot, 5:67
*Reed, Frank E.*, book review, 3:56
*Robinson, Leif J.*, book review, 2:75
  Celebrating Ceres at 200, 1:49
  Sixty Years of Hindsight, 5:30
*Robinson, Micah*, letter, 3:12
*Robson, Monty*, letter, 4:14
*Roohr, Damien*, letter, 1:16
*Roth, Joshua*, Fine Focus with a Twist, 2:59
  news note, 1:21, 2:20, 24, 6:20
  Telescopes I Have Known and Loved, 2:10
*R. W. S.*, see *Sinnott, Roger W.*
*Ryan, Jay*, SkyWise, 1:106, 2:114, 3:100, 4:106, 5:120, 6:108
*Schaaf, Fred*, Andromeda at the Zenith, 6:90
  Early Sky-Signs of Autumn, 3:82
  In Search of the Sea Goat, 4:90
  Light-Pollution Notes: Recent Victories, 4:96
  Light-Pollution Notes: Regional Organizations, 2:104
  Near Sky, The: Green Flashes (Part 1), 5:104
  Near Sky, The: Green Flashes (Part 2), 6:96
  Near Sky, The: Readying for Auroras, 3:88
  Near Sky, The: Special Summer Rainbows, 1:96
  Sagittarius and a Symphony of Stars, 2:98
  Scorpius and a Little Night Music, 1:90
  Southern Hemisphere Sky, 1:98, 2:106, 3:90, 4:98, 5:106, 6:98
  Sun, Moon, and Planets, The, 1:95, 2:103, 3:87, 4:95, 5:103, 6:95
  Wanderings at the Fomalhaut Hour, 5:98
*Schaefer, Bradley E.*, The Accuracy of the Press, 1:10
*Schaefer, Harden*, letter, 1:16
*Schilling, Govert*, Adaptive Optics Comes of Age, 4:30
  news note, 2:20, 26, 4:26
*Seronik, Gary*, Binocular Highlight, 1:92, 2:100, 3:84, 4:92, 5:100, 6:92
  Compact 8-inch Travelscope, A, 6:120
  More Uses for Relay Lenses, 4:124

Observer's Notebook, *3*:112
*Sewell, Alan E.*, letter, *4*:14
*Shepherd, Debra*, Images, *4*:48
*Simpson, John*, letter, *1*:16
*Sincell, Mark*, The Lost Stars — II, *4*:10
*Sinnott, Roger W.*, Jupiter's Close Encounter with the Moon, *2*:110
news note, *1*:22, *5*:24
Partial Lunar Eclipse for the Far East, A, *1*:103
Perseid Prospects for 2001, *2*:108
Quest of Elusive Moons, The, *4*:100
Titania Hides a Bright Star, *3*:95
Update on Titania's Occultation, *4*:103
Where to Look for a Planet's Moons, *4*:102
see also *Gingrich, Mark*
*Skiff, Brian A.*, Taking Your Telescope to the Limit, *3*:102
*Skrutskie, Michael*, How 2MASS Surveyed the Sky, *1*:38
2MASS: Unveiling the Infrared Universe, *1*:34
*Stout, R. William*, letter, *3*:12
*Sutherland, Michael*, letter, *1*:16
*Swanson, Mike*, letter, *6*:16
*Tatum, Jeremy*, letter, *2*:16
*Taylor, A. Russell*, see *English, Jayanne*
*Taylor, Chuck*, letter, *2*:14
*Trigubov, Eduard*, see *Petrunin, Yuri*
*Tung, Brian*, letter, *3*:12
*Tytell, David*, book review, *5*:80
History Repeated: Sharing Mount Graham, *2*:46
news note, *2*:23, *3*:20, 21, 24, *4*:19, 22, 24, *5*:20, 22, 25, *6*:26
Sharing Mauna Kea, *2*:40
Wide Deep Field, A: Getting the Big Picture, *3*:42
see also *MacRobert, Alan; Downey, Phillip; Beatty, J. Kelly*
*Tytell, David*, and *J. Kelly Beatty*, news note, *1*:26
*Urban, Josh*, letter, *1*:14
*Vernier, Richard*, letter, *1*:14
*Walker, Sean*, Fixing Vignetting in Astrophotos, *3*:116
*Weil, Thomas A.*, Another Look at Cosmic Distances, *2*:62
*Whitman, Alan*, Deep-Sky Notebook, *2*:116
*Winfree, Art T.*, letter, *1*:16
*Wood, Charles A.*, Lunar Notebook, *1*:116, *2*:118, *3*:108, *4*:118, *5*:127, *6*:115
*Young, Robert*, Running the Numbers, *6*:10


## departments


**Amateur Astronomers —**
Amateur Astronomy in Russia: Past, Present, and Future, *3*:66
Amateur Events, *1*:84, *2*:90, *3*:75, *4*:84, *5*:90, *6*:83
Astronomy on the Road, *5*:84
Behind the Scenes with the Rockland Astronomy Club, *2*:84
Comet Award Winners, *4*:81
Decade of Celebrating Astronomy in the Northeast, A, *2*:83
Gift of the Universe, A, *1*:79
Northeast Astronomy Forum's Pillar, The, *2*:86
Pioneer Hong Kong Amateur, A, *4*:78
Sparks Fly Under Sonoma Skies, *6*:77
Star Trails, *1*:82, *2*:88, *3*:73, *4*:82, *5*:86, *6*:80
Stars Through the Eyes of the Dragon, The, *4*:76
Striking Sparks Mailbag, *6*:79
**Astro Imaging —**
Afocal What? *2*:130
Astro Imaging with Digital Cameras, *2*:128
Color CCD Imaging with Luminance Layering, *1*:133
Fixing Vignetting in Astrophotos, *3*:116
Gallery, *1*:140, *2*:138, *3*:124, *4*:128, *5*:140, *6*:136
High-Resolution Composite Color Imaging with Films, *1*:127
Imaging the Sky from the Suburbs, *5*:132
*Lab* Composite-Imaging Method, The, *1*:128
Thoughts on Super-Resolution Planetary Imaging, *6*:127
**Books & Beyond —**
Art of Chesley Bonestell, The, Ron Miller and Frederick C. Durant III, *6*:72
Briefly Noted, *2*:80, *4*:73, *5*:82
Comet Science: The Study of Remnants from the Birth of the Solar System, Jacques Crovisier and Thérèse Encrenaz, *4*:69
Deep-Sky Observer's Year, The: A Guide to Observing Deep-Sky Objects Throughout the Year, Grant Privett and Paul Parsons, *5*:77
Deep Sky Observing: The Astronomical Tourist, Steven R. Coe, *5*:77
Einstein's Brainchild: Relativity Made Relatively Easy! Barry Parker, *3*:56
Einstein's Unfinished Symphony, Marcia Bartusiak, *3*:59
Encyclopedia of Astronomy and Astrophysics, Paul Murdin, ed., *2*:75
Even More Einstein, *3*:60
Field Guide to the Deep Sky Objects, Mike Inglis, *5*:77
Great Comets, Robert Burnham, *4*:69
Guides to the Night Sky: Audio Tours of the Heavens Above, Benjamin J. Senson, *4*:72
Maxwell's Conundrum: A Serious but Not Ponderous Book About Relativity, Walter Scheider, *3*:56
More Space Artistry, *6*:74
Our Universe: The Thrill of Extragalactic Exploration As Told by Leading Experts, *6*:74
Parallax: The Race to Measure the Cosmos, Alan W. Hirshfeld, *2*:78
Percival Lowell: The Culture and Science of a Boston Brahmin, David Strauss, *1*:74
Relativity for Windows, Hans-Josef Patt and Peter Nemec, *3*:56
Revealing the Universe: The Making of the Chandra X-ray Observatory, Wallace Tucker and Karen Tucker *5*:80
Video Astronomy, Steve Massey, Thomas A. Dobbins, and Eric J. Douglass, *1*:76
**Celestial Calendar —**
Calendar Notes, *1*:106, *2*:113, *3*:98, *4*:106, *5*:118, *6*:107
Crescent Moon Hides Venus, The, *1*:100
December's Annular Eclipse, *6*:104
Full Moon Hides Saturn, The, *6*:105
Jupiter's Close Encounter with the Moon, *2*:110
Jupiter's Satellites, *1*:105, *2*:112, *3*:97, *4*:104, *5*:116, *6*:106
Leonids 2001: The Saga Continues, *5*:109
Nice Comet for the Holiday Season, A, *6*:101
Partial Lunar Eclipse for the Far East, A, *1*:103
Perseid Prospects for 2001, *2*:108
Quest for Elusive Moons, The, *4*:100
Saturn's Satellites, *1*:104, *2*:111, *3*:96, *4*:105, *5*:117
Saturn's Vanishing Act, *3*:93
SkyByes, *6*:109
SkyWise, *1*:106, *2*:114, *3*:100, *4*:106, *5*:120, *6*:108
Titania Hides a Bright Star, *3*:95
Update on Titania's Occultation, *4*:103
Where to Look for a Planet's Moons, *4*:102
**Computers in Astronomy —**
Another Look at Cosmic Distances, *2*:62
Astronomy Online, *1*:70, *2*:70, *4*:64, *5*:70, *6*:66
Flexible Virtual Planetarium, A, *6*:63
*S&T* Test Report: A Trio for Minor-Planet Observers, *4*:58
Screen Shot, *1*:68, *2*:68, *4*:62, *5*:67, *6*:68
Star Catalogs for the 21st Century, *1*:65
Stellar Guides for Your Birthday, *5*:63
**50 & 25 Years Ago,** *1*:16, *2*:14, *3*:14, *4*:14, *5*:14, *6*:14
**Focal Point —**
Accuracy of the Press, The, *1*:10
Escape from the Armchair, *5*:10
Lost Stars — II, The, *4*:10
Lost Stars, The, *3*:10
Running the Numbers, *6*:10
Telescopes I Have Known and Loved, *2*:10
**Guide to the Evening Sky —**
Andromeda at the Zenith, *6*:90
Binocular Highlight, *1*:92, *2*:100, *3*:84, *4*:92, *5*:100, *6*:92
Early Sky-Signs of Autumn, *3*:82
In Search of the Sea Goat, *4*:90
Light-Pollution Notes: Recent Victories, *4*:96
Light-Pollution Notes: Regional Organizations, *2*:104
Near Sky, The: Green Flashes (Part 1), *5*:104
Near Sky, The: Green Flashes (Part 2), *6*:96
Near Sky, The: Readying for Auroras, *3*:88
Near Sky, The: Special Summer Rainbows, *1*:96
Northern Hemisphere Sky, *1*:91, *2*:99, *3*:83, *4*:91, *5*:99, *6*:91
Sagittarius and a Symphony of Stars, *2*:98
Scorpius and a Little Night Music, *1*:90
Small-Scope Sampler, *1*:93, *2*:101, *3*:85, *4*:93, *5*:101, *6*:93
Southern Hemisphere Sky, *1*:98, *2*:106, *3*:90, *4*:98, *5*:106, *6*:98
Sun, Moon, and Planets, The, *1*:95, *2*:103, *3*:87, *4*:95, *5*:103, *6*:95
Wanderings at the Fomalhaut Hour, *5*:98
**Images,** *1*:52, *2*:52, *3*:46, *4*:48, *5*:54, *6*:60
**Letters,** *1*:14, *2*:12, *3*:12, *4*:12, *5*:12, *6*:12
**Mission Update,** *1*:32, *2*:30, *3*:30, *4*:28, *5*:28, *6*:30
**New Product Showcase,** *2*:60, *3*:54, *4*:56
**News Notes —**
Antique-Instrument Market Heats Up, *5*:24
Asteroid Belt Like Our Own, An? *5*:20
Barely Stable Planetary Systems, *4*:20
Best Star Catalog Ever, The, *1*:22
Better Fix on Gamma-Ray Bursts, A, *5*:16
Biggest-Ever Cosmic Map, The, *2*:20
Billions of Comets Orbit a Dying Star, *4*:26
Blue-Ribbon Panel Opposes NASA Control of Astronomy, *6*:26
Brown Dwarf and Planet Combo, A, *1*:24
Brown Dwarfs with Circum"stellar" Disks, *3*:24
Chicago's Controversial Ray of Light, *6*:25
Cousin of the Solar System, A, *6*:22
Daylight Meteor Lights the Northeast, *5*:23
Disputed Weird Worlds Among 11 New Exoplanets, *1*:24
Double Cluster Really Is Double, The, *2*:19
Dust Storm Clouds Out Mars, *5*:22
Earth from Mars Odyssey, *2*:28
Evidence of Cosmic Speedup, *1*:21
Exoplanet Transit Refined, *6*:22
Far-Out Kuiper-Belt Object Confounds Dynamicists, *3*:24
Farthest Supernova Clinches Case for Accelerating Universe, *1*:20
Follow That Story, *1*:28, *2*:28, *6*:27
Fountains of Chondrules from the Sun's Cloudy Birth, *4*:18
Fred Hoyle, 1915–2001, *5*:25
Ganymede's Hidden Ocean, *1*:28
Horsehead by Hubble, *2*:19
How Miras Vary, *5*:18
Ice Spires of Callisto, The, *6*:26
Iridium Satellites Get New Lease on Life, *2*:24
Kuiper Belt Binary, A, *1*:28
Kuiper Belt Object Dethrones Ceres, *6*:25
Landmark Light-Pollution Law, *3*:25
Listening to Alpha Centauri's Heartbeat, *4*:24
Looking Toward the Dark Age, *5*:19
Mapping Mass in 3-D Space, *3*:21
Meet Comet Borrelly, *6*:18
Millisecond-Pulsar Bonanza in a Globular Cluster, *2*:26
Mira's Companion, *3*:19
Moon Sheds Lights on Earth's Climate, *4*:26
New Cosmology Firms Up, The, *2*:18
New Physics from Ancient Quasars? *6*:20
No Central Black Hole, *2*:26
No Planet Found at Barnard's Star, *4*:21
Oblate Altair, *3*:27
Origin of Brown Dwarfs, The, *5*:23
Other Ways To Make Martian Gullies, *1*:26
Sloan at Your Fingertips: The SDSS SkyServer, *3*:21

Sloan Survey Shows Its Stuff, *3:*20
Solar-Neutrino Problem Solved, *3:*18
Source of the Milky Way's X-rays, The, *5:*20
Stage Is Set for FAME, The, *1:*22
Star Cluster Awash in X-rays, A, *4:*22
Stars with Planets I: Telltale Heavy Elements, *2:*22
Stars with Planets II: Swallowed Worlds, *2:*22
Stars with Planets III: Clues from Planetary Nebulae, *2:*23
Stars with Planets IV: Most Earths Are Old, *2:*24
Stellafane Gets Lighting Reprieve, *2:*28
Stuff of Life from Irradiated Ice, *3:*26
Time Bomb in Scorpius, *5:*18
Two Types of Spirals, *3:*22
Warped Edge-on Galaxy, A, *5:*17
White Dwarfs As Dark Matter, *2:*20
Why Does Venus Spin Backward? *4:*19
Why Is Mars Red? *1:*26
Windblown Waves on a Striking Nebular Sea, *4:*22
World Awash in Light, A, *6:*24
Young Globular Cluster in the LMC, A, *4:*20

**Observer's Log —**
Deep-Sky Notebook, *1:*114, *2:*116, *3:*105, *4:*115, *5:*125, *6:*113
Lunar Notebook, *1:*116, *2:*118, *3:*108, *4:*118, *5:*127, *6:*115
More Pretty Doubles, *1:*111
My Favorite Deep-Sky Objects, *4:*110
Observer's Notebook, *2:*120, *3:*110, 112, *4:*119, *5:*129, *6:*117
Sampling of Edge-on Galaxies, A, *5:*122
Taking Your Telescope to the Limit, *3:*102

**Rambling Through the Skies —**
Astronomical Babel, *5:*93
Europing the Bull, *3:*77
Hollywood Star, *2:*92
Horse Sense, *1:*86
Missing Mars, *6:*86
Unlimited Ceiling, *4:*86

**Software Showcase,** *1:*72, *2:*72, *4:*66, *5:*74, *6:*70

**Spectrum,** *1:*8, *2:*8, *3:*8, *4:*8, *5:*8, *6:*8

**Telescopes Plus —**
LX90 or NexStar 8? *1:*61
*S&T* Test Report: A Dob for the Deep Sky, *4:*49
*S&T* Test Report: Fine Focus with a Twist, *2:*59
*S&T* Test Report: Meade's Newest "Go To" Telescope, *1:*55
*S&T* Test Report: The Astrovid Color PlanetCam, *2:*55
*S&T* Test Report: Two Ultrasensitive CCD Cameras, *5:*57
*S&T* Test Report: William Optics Megrez 80 Refractor, *4:*51

**Telescope Techniques —**
Attractive Three-Point Dobsonian, An, *1:*120
Compact 8-inch Travelscope, A, *6:*120
Downsizing Newtonian Secondary Mirrors, *4:*122
Hargreaves Strut, The, *3:*114
More Uses for Relay Lenses, *4:*124
Texas Slim: A Multipurpose Binocular Mount, *2:*124


## subjects


***Amateur activities:*** astronomical automobile license plates, *5:*84; "birthday stars," *5:*63; building telescopes to give to children, *6:*77; in Hong Kong, *4:*76; in Japan, *6:*8; Northeast Astronomy Forum and Telescope Show, *2:*83; Pontchartrain Astronomy Society, *3:*73; Raleigh Astronomy Club, *4:*82; Rockland Astronomy Club, *2:*84; in Russia, *3:*66; Sonoma County Astronomical Society, *6:*77; Tainai Star Party, *6:*8; Universe Expo, *6:*80; Yeier Optics scientific-instrument auction, *5:*24

***Archaeoastronomy:*** Babylonian ziggurats, *5:*93

***Art:*** astronomical Web sites, *6:*66; stained-glass window honoring Clyde Tombaugh, *2:*88

***Asteroids (minor planets):*** 702 Alauda, *1:*106; 129 Antigone, *3:*98; 407 Arachne, *4:*106; 105 Artemis, *6:*107; asteroid belt around Zeta Leporis? *5:*20; binary, *1:*28; Ceres, *1:*49, 106; 225 Henrietta, *4:*106; history, *1:*44; investigation of, *1:*44; Kirkwood gaps, *1:*46; Kuiper Belt objects, *1:*28; *3:*24; *6:*25; 222 Lucia, *3:*98; 713 Luscinia, *2:*113; 1303 Luthera, *6:*107; 253 Mathilda, *3:*98; 9 Metis, *3:*98; 1998 $WW_{31}$, *1:*28; spectral matches to meteorites, *1:*50; 2000 $CR_{105}$, *3:*24; 2001 $KX_{76}$, *6:*25; 4 Vesta, *5:*120; Yarkovsky effect, *1:*48

***Astrometry:*** aberration of light, *5:*41; first stellar parallax, *5:*39; improving star catalogs, *1:*22, 65

***Astronomical constants:*** cosmological, *2:*62; fine structure, *6:*20

***Astronomy and society:*** accuracy of the press, *1:*10; conflict over Mauna Kea, *2:*40; doomsday fears over atomic-particle experiment, *2:*36; explaining modern cosmology, *2:*8; loss of starry skies, *3:*10; movies and television made at Griffith Observatory, *2:*92

***Atlases and catalogs:*** *Hipparcos and Tycho Catalogues, 1:*65; *Hubble Guide Star Catalog, 1:*65; NOAO Deep Wide-Field Survey, *3:*43; Sloan Digital Sky Survey, *3:*20; *Tycho-2, 1:*66; *USNO-A, 1:*66; *USNO CCD Astrographic Catalog* (UCAC), *1:*22, 66

***Atmospheric phenomena:*** green flash, *5:*104; *6:*96; rainbow at sunset, *1:*96

***Black holes:*** see ***Collapsed objects***

***Chemistry:*** in molecular clouds, *3:*26

***Collapsed objects:*** heavy elements produced by neutron-star collisions, *1:*28; millisecond pulsars in globular star cluster, *2:*26; neutron stars, *2:*32; no black hole at core of 47 Tucanae, *2:*26; pulsars, *2:*33; quark stars, *2:*35; strange stars, *2:*35

***Comets:*** around red-giant star, *4:*26; 19P/Borrelly,

Your road map of the heavens . . .
DELUXE VERSION
Color-coded deep-sky objects; laminated or spiralbound and folded.
skyAtlas
skyAtlas 2000.0
DESK VERSION
Black stars on a white background; laminated or unbound and boxed.
FIELD VERSION
White stars on a black background; laminated or unbound and boxed.
Sky Atlas 2000.0, 2nd Edition,
by Wil Tirion and Roger W. Sinnott
SKY & TELESCOPE
Call 800-253-0245 or
find out more online at
www.skypub.com

6:18; Edgar Wilson Award, *4:81*; LINEAR (C/2000 $WM_1$), *6:101*; LINEAR (C/2001 A2), *2:120*; Petriew (P/2001 Q2), *5:129*; Utsunomiya-Jones (C/2000 W1), *4:81*

***Computing:*** BASIC programming language, *2:70*; determining cosmological distances, *2:62*; using LCD projectors with astronomy software, *6:63*

***Constellation study:*** Andromeda, *6:90*; Aquarius, *4:90*; best naked-eye pairings of very bright stars, *1:98*; Capricornus, *4:90*, *93*; Cetus, *4:90*; Great Celestial Sea, *4:90*; Lyra, *2:116*; Pisces, *4:90*; Piscis Austrinus, *4:90*; Scutum Sobiescianum, *3:85*; Taurus Poniatovii, *2:101*

***Cosmic background radiation:*** fluctuations of, *2:18*

***Cosmology:*** accelerating universe, *1:20*; *2:62*; concordance model, *2:18*; cosmological distances, *2:62*; dark energy, *2:62*; *6:27*; deuterium ratio of early universe, *2:28*; inflation model, *2:18*; Olbers' paradox, *6:44*; online resources, *4:64*; reionization era, *5:19*

***Dark matter:*** finding using gravitational lensing, *3:21*; white-dwarf stars as, *2:20*

***Eclipses:***
- *Lunar:* July 5–6, 2001, partial, *1:103*
- *Solar:* June 21, 2001, total, *3:110*; *4:128*; *5:86*; December 14, 2001, annular, *6:104*

***Education:*** Pisgah Astronomical Research Institute (PARI), *4:42*; public observatory in Connecticut, *1:79*; *4:14*; Student Worldwide Astronomy Network (SWAN), *4:14*; using LCD projectors with astronomy software, *6:63*

***Galaxies:*** acoustic pressure waves and spiral structure, *3:22*
- *Clusters of:* Check Mark group in Aries, *6:113*; Markarian's Chain, *4:111*; near M92, *1:114*; Pegasus I, *5:125*; Virgo, *4:111*
- *Interacting:* ESO 510–13, *5:17*
- *Local Group (*see also *Milky Way* and ***Magellanic Clouds****):* M31, *4:110*; *6:90*; Sculptor Dwarf, *4:111*
- *Milky Way:* infrared views, *1:34*; source of diffuse X-ray glow, *5:20*
- *"Normal":* A2315+08, *5:127*; A2317+08A, *5:126*; A2317+08B, *5:127*; A2317+08C, *5:126*; A2318+08, *5:126*; IC 167, *6:114*; IC 1730, *6:113*; IC 4645, *1:115*; IC 5309, *5:127*; M84, *4:111*; M86, *4:111*; MGC +01-59-58, *5:127*; MGC +01-59-61, *5:127*; NGC 100, *5:124*; NGC 134, *5:123*; NGC 253, *6:93*; NGC 676, *5:124*; NGC 678, *6:113*; NGC 680, *6:113*; NGC 691, *6:114*; NGC 694, *6:114*; NGC 695, *6:114*; NGC 697, *6:114*; NGC 779, *5:124*; NGC 891, *5:124*; NGC 1049, *4:116*; NGC 1569, *4:117*; NGC 4565, *4:112*; NGC 4753, *3:20*; NGC 4945, *1:40*; NGC 6323, *1:114*; NGC 6327, *1:114*; NGC 6329, *1:114*; NGC 6332, *1:114*; NGC 6336, *1:115*; NGC 6702, *2:117*; NGC 6703, *2:116*; NGC 6744, *3:90*; NGC 6946, *3:107*; *6:14*; NGC 7184, *5:122*; NGC 7331, *5:102*; NGC 7332, *5:123*; NGC 7339, *5:123*; NGC 7410, *5:123*; NGC 7586, *5:127*; NGC 7608, *5:126*; NGC 7611, *5:125*; NGC 7612, *5:126*; NGC 7615, *5:126*; NGC 7617, *5:125*; NGC 7619, *5:125*; NGC 7621, *5:126*; NGC 7623, *5:126*; NGC 7626, *5:125*; NGC 7631, *5:125*; NGC 7640, *5:102*, *124*; NGC 7793, *6:94*; PGC 59930, *1:115*; PGC 59950, *1:115*; PGC 59984, *1:115*; PGC 91583, *1:115*; UGC 711, *5:124*; UGC 12510, *5:127*; UGC 12518, *5:126*; UGC 12522, *5:125*; UGC 12535, *5:127*; Z406–69, *5:126*; Z406–80, *5:127*

***Gamma-ray astronomy:*** gamma-ray bursts, *5:16*

***Gravitation:*** gravitational lensing, *3:32*

***History:*** academic tyranny of Isaac Newton, *4:8*; amateur astronomy in Russia, *3:66*; development of Maksutov telescope design, *6:52*; discovery of asteroids, *1:44*; measuring stellar parallax, *5:39*; *Sky & Telescope*'s 60th anniversary, *5:8*, *30*

***Hubble Space Telescope:*** changing orientation of Saturn's rings, *6:60*; fourth servicing mission, *3:30*; malfunction of Space Telescope Imaging Spectrograph, *3:30*; view of Horsehead Nebula, *2:19*; warped edge-on galaxy, *5:17*

***Imaging:***
- *Astrophotography:* afocal, *2:130*; vignetting, *3:116*
- *Charge-coupled devices (CCDs):* afocal, *2:130*; digital cameras, *2:128*; pixel-size/focal-length/angular-coverage nomogram, *6:130*; from suburban location, *5:132*; super-resolution planetary, *6:127*
- *Image processing:* composite color imaging, *1:127*; fixing vignetting, *3:116*; *Lab* color model, *1:128*; LRGB technique, *1:133*; luminance layering, *1:133*

***Infrared astronomy:*** Two Micron All Sky Survey (2MASS), *1:34*; Type II quasar, *3:16*

***Interstellar matter:*** chemistry in cold clouds, *3:26*

***Light pollution:*** *3:10*; beacon on Chicago's Palmolive Building, *6:25*; Connecticut lighting law passed, *3:25*, *4:96*; in Hong Kong, *4:77*; in Houston, Texas, *4:10*; regional organizations, *2:104*; and Stellafane site, *2:28*; World Atlas of Artificial Night-Sky Brightness, *6:24*

***Magellanic Clouds:*** tilt of LMC, *1:40*; young globular star cluster in LMC, *4:20*

***Meteorites:*** cause of redness of Mars's surface, *1:26*; chondrules, *4:18*; spectral matches to asteroids, *1:50*

***Meteors:*** Delta Aquarid shower, *1:106*; Alpha Aurigid shower, *3:98*; Geminid shower, *6:107*; July 23, 2001, daylight fireball, *5:23*; Leonid shower, *5:109*; Orionid shower, *4:108*; Perseid shower, *2:108*

***Molecular clouds:*** chemistry in, *3:26*

***Moon:*** Apollo 15 landing site, *1:116*; "blue Moons," *4:106*; Caucasus Mountains, *5:127*; craterlets in Plato, *3:12*; Dionysius crater, *4:118*; Earthshine and Earth's climate, *4:26*; Hadley Rille, *1:116*; Haemus Mountains, *3:108*; Julius Caesar crater, *3:108*; Mare Imbrium, *6:115*; Ritter crater, *4:118*; Sabine crater, *4:118*; Schickard crater, *2:118*; Vallis Alpes, *5:128*; Wargentin crater, *2:118*;

***Nebulae:***
- *Bright:* M16 (Eagle), *4:113*; M17, *1:37*; M20 (Trifid), *4:113*; M42 (Orion) and M43, *4:112*; M78, *1:36*; NGC 3603, *1:39*; NGC 3576, *1:39*
- *Dark:* Barnard 64, *1:93*; Barnard 106, *3:86*; Barnard 107, *3:86*; Barnard 110, *3:86*; Barnard 111, *3:86*; Barnard 113, *3:86*; Barnard 119a, *3:86*; Barnard 259, *1:93*; Horsehead, *2:19*
- *Planetary:* and extrasolar planets, *2:23*; IC 1295, *3:106*; M57 (Ring), *2:117*; *3:102*; *4:114*; NGC 6445, *3:105*; NGC 6537, *4:22*; NGC 6572, *2:102*; NGC 7662, *5:101*

***Neutron stars:*** see ***Collapsed objects***

***Novae:*** Cygni 2001 No. 2, *5:118*; Sagittarii 2001 No. 2, *5:118*

***Observatories:***
- *Amateur and public:* Griffith, *2:92*; Ho Koon Nature Education cum Astronomical Centre, *4:80*; John J. McCarthy at New Milford High School, New Jersey, *1:79*; Morris, *4:82*; Onan, *6:81*; Pisgah Astronomical Research Institute (PARI), *4:42*
- *Professional:* Mauna Kea, *2:40*; Sudbury Neutrino, *3:18*

***Observing techniques:*** testing seeing limits with sequence of stars near M57, *3:102*; "Young's equation" for determining number of good observing nights, *6:10*

***Occultations:*** July 17, 2001, of Venus by the Moon, *1:100*; *4:119*; August 15, 2001, of Jupiter by the Moon, *2:110*; September 7–8, 2001, of star by Uranus's moon Titania, *3:95*; September 10, 2001, of Saturn by the Moon, *3:93*; November 30–December 1, 2001, of Saturn by the Moon, *6:105*

***Online databases and communications*** (see also ***Computing****):* astronomical art Web sites, *6:66*; astronomical humor, *1:70*; permissions, *5:70*; resources for cosmology and relativity, *4:64*

***Optics:*** adaptive, *4:30*; flexible secondary mirrors, *4:37*; Maksutov design, *6:54*

***Organizations:*** Astronomical Society of the Pacific, *6:80*; International Dark-Sky Association, *2:104*; New England Light Pollution Advisory Group (NELPAG), *2:104*

***People:*** Bessel, F., *5:42*; Bradley, J., *5:41*; Brahe, T., *5:39*; Clarke, A., *6:12*; Dean, J., *2:93*; Dunlop, J., *3:14*; Fraunhofer, J., *5:42*; Henderson, T., *5:43*; Herschel, J., *3:14*; Herschel, W., *5:41*; Hooke, R., *5:40*; Hoyle, F., *5:25*; Koenig, D., *1:82*; Liu, J., *4:78*; Maksutov, D., *6:52*; Newton, I., *4:8*; Olbers, H., *6:45*; Petriew, V., *5:129*; Poe, E., *6:47*; Robson, M., *1:79*; Sandras, M., *3:73*; Simon, B., *3:73*; Struve, F., *5:42*; Tombaugh, C., *2:88*; Urban, D., *2:86*

***Physics:*** change in fine structure constant? *6:20*; *r*-process in nucleosynthesis, *1:28*

***Planets and their satellites:***
- *Earth (*see also *Moon):* climate-Earthshine connection? *4:26*; final fate of, *2:28*; imaged by Mars Odyssey spacecraft, *2:28*
- *Extrasolar:* absence of around Barnard's Star, *4:21*; absence of in globular cluster, *1:28*; absorbed by star, *2:22*; of Upsilon Andromedae, *4:20*; asteroid belt around Zeta Leporis? *5:20*; brown dwarfs with circumstellar disks, *3:24*; of HD 28185, *1:25*; of HD 80606, *1:25*; of HD 82943, *1:24*; *2:22*; of HD 209458, *6:22*; and metal-rich stars, *2:22*; most eccentric orbit, *1:25*; and planetary nebulae, *2:23*; system with 2:1 orbital resonance, *1:24*; terrestrial planet creation, *2:24*; transiting star, *6:22*; 47 Ursae Majoris, *6:22*
- *Jupiter:* hidden ocean on Ganymede, *1:28*; ice mountains on Callisto, *6:26*; observing Himalia, *4:100*; view by Cassini spacecraft, *3:46*
- *Mars:* chronology of exploratory spacecraft, *6:86*; flares seen in Edom Promontorium, *3:112*; global dust storm, *5:22*; *6:117*; gullies, *1:26*; redness from meteoritic iron, *1:26*
- *Neptune:* observing Triton, *2:121*; *4:102*
- *Pluto:* Charon, *4:102*
- *Saturn:* changing orientation of rings, *6:60*; observing Hyperion, Iapetus, and Phoebe, *4:101*
- *Uranus:* observing Ariel, Umbriel, Titania, and Oberon, *4:101*; stellar occultation by Titania, *3:95*; *4:103*
- *Venus:* Ashen light, *1:101*; retrograde rotation, *4:19*

***Pulsars:*** see ***Collapsed objects***

***Quasars:*** distribution of, *2:20*; Einstein's Cross, *4:114*; evidence for change in fine structure constant, *6:20*; farthest, *3:20*; Type II, *3:16*

***Radio astronomy:*** Iridium satellite phone system and, *2:24*; supernova remnants in Cygnus, *1:52*

***Relativity:*** online resources, *4:64*

***Science policy:*** environmental battle for Mount Graham, *2:46*; master plan for observatories on Mauna Kea, *2:40*; NASA control of ground-based observatories opposed, *6:26*; 2002 NASA budget, *1:32*

***Sky lore:*** celestial ceilings, *4:86*; centaurs, *1:86*; Centaurus, *1:86*; Sagittarius, *1:86*; Taurus and Europa, *3:77*

***Solar system:*** formation of meteoritic chondrules, *4:18*; orbital stability, *4:20*

***Spacecraft*** (see also ***Hubble Space Telescope****):* Beagle 2, *2:30*; Cassini, *3:46*; Chandra X-ray Observatory, *6:30*; Cosmos 419, *6:87*; Deep Impact, *3:30*; Deep Space 1, *6:18*; Far Ultraviolet Spectroscopic Explorer (FUSE), *2:30*; Full-sky Astrometric Mapping Explorer (FAME), *1:22*; *6:30*; Galileo, *1:32*; *3:30*; *6:26*; Genesis, *5:28*; International Space Station, *4:12*; Iridium, *2:24*; KORONAS-F, *5:28*; Lunar A, *2:30*; Mariner 3, *6:86*; Mariner 4, *6:87*; Mariner 6, *6:87*; Mariner 7, *6:87*; Mariner 8, *6:87*; Mariner 9, *6:87*; Mars 1, *6:86*; Mars 2, *6:87*; Mars 3, *6:86*; Mars 4–7, *6:87*; Mars 96, *6:88*; Mars Climate Orbiter, *6:88*; Mars Express, *2:30*; Mars Global Surveyor, *6:88*; Mars Observer, *6:88*; Mars Pathfinder, *6:88*; Mars Polar Lander, *6:88*; Messenger, *4:28*; Microwave Anisotropy Probe (MAP), *4:28*; Near Earth Asteroid Rendezvous (NEAR-Shoemaker), *3:16*; New Horizons, *5:28*; *6:30*; No-

zomi, 6:86; Pioneer 10, 1:33; Pluto and Outer Solar System Explorer (POSSE), 5:28; 6:30; Pluto–Kuiper Belt mission, 5:28; 6:30; Selene, 2:30; Spektr-Rontgen-Gamma, 4:28; 2001 Mars Odyssey, 1:32; 2:28; Ulysses, 6:30; Viking 1 and 2, 6:87; Zond 2, 6:86

***Space debris:*** reentry of Russian rocket, 6:16

***Star clusters:***

*Associations:* Ara OB1, 5:54

*Globular:* Arp 2, 4:115; "Bright Blob," 4:117; C27, 4:117; C39 (Mayall C), 4:117; extragalactic, 4:115; Fornax 5, 4:116; G1, 4:116; G2, 4:116; G52, 4:116; G76, 4:116; M2, 4:92; M9, 1:93; M19, 1:94; M30, 4:94; M54, 4:115; M56, 2:116; M62, 1:94; NGC 288, 6:93; NGC 1569A/B, 4:117; NGC 1850, 4:20; NGC 5139 (Omega Centauri), 4:112; NGC 6193, 5:54; NGC 6293, 1:94; NGC 6342, 1:93; NGC 6356, 1:93; NGC 6440, 3:105; NGC 6712, 3:106; NGC 6752, 3:90; Terzan 7, 4:115; Terzan 8, 4:115; 47 Tucanae, 1:28; 2:26

*Open:* Arches Cluster, 4:22; Blanco 1, 6:94; Collinder 316, 1:92; Double Cluster, 2:19; False Comet, 1:92; IC 4665, 2:101; IC 4756, 2:100, 102; M11, 3:85; M45 (Pleiades), 4:111; NGC 457, 6:92; NGC 2264, 2:52; NGC 6231, 1:92; NGC 6704, 3:86; NGC 6791, 2:116; NGC 6939, 3:107; 6:14; Stephenson 1, 2:118; Trumpler 24, 1:92

***Stars:*** asteroseismology, 4:24; brown dwarfs, 1:42; 3:24; 5:23; distances to, 5:63; white dwarfs as dark matter, 2:20

*Double and multiple:* 1 Arietis, 6:113; Epsilon Boötis, 1:113; brown dwarf around Gliese 86, 1:24; Alpha Canum Venaticorum (Cor Caroli), 1:113; Alpha Capricorni (Algedi), 4:93; Beta Capricorni (Dabih), 4:93; Sigma Capricorni, 4:93; Rho Capricorni, 4:94; Omicron Capricorni, 4:94; Pi Capricorni, 4:94; Eta Carinae, 1:28; Alpha Centauri, 4:24; Delta Cephei, 5:100; 24 Comae Berenices, 1:113; Beta Cygni (Albireo), 1:113; Omicron[1] Cygni, 1:113; 3:84; Nu Draconis, 1:113; Gliese 570D, 1:42; h975, 5:102; 95 Herculis, 1:113; Alpha Herculis (Rasalgethi), 1:113; Kappa Herculis (Marfik), 1:111; Herschel VI 50, 3:86; Hough 197, 5:102; Gamma Leonis (Algieba), 1:113; Epsilon Lyrae, 1:111; 36 Ophiuchi, 1:94, 113; 67 Ophiuchi, 2:101; 70 Ophiuchi, 2:101; Beta Scorpii (Acrab), 1:113; Delta Sculptoris, 6:94; Struve 2216, 2:102; Struve 2375, 2:102; Struve 2391, 3:86; Gamma Virginis (Porrima), 1:111

*Individual:* Barnard's Star, 4:21; CW Leonis, 4:26; shape of Altair, 3:27

*Variable:* Delta Cephei, 5:100; Mira, 3:19; 5:18; Beta Persei (Algol), 6:90; Sakurai's Object (V4334 Sagittarii), 5:48; U Scorpii, 5:18; R Scuti, 3:86

***Sun:*** solar-neutrino problem solved, 3:18

***Supernovae:*** farthest, 1:20; hypernovae, 6:27; remnants in Cygnus, 1:52; U Scorpii ready to explode, 5:18; SN 1997ff, 1:20; Type Ia, 5:18

***Telescope making:*** binocular mount, 2:124; compact 8-inch Dobsonian, 6:120; Hargreaves strut for telescope stability, 3:114; relay lenses, 4:122; in Russia, 3:70

***Telescopes:***

*Amateur:* antique instruments, 5:24; cost of, 1:8; 6:14; Francis Milsom's 10-inch Dobsonian, 1:120; Raleigh Astronomy Club's 0.6-meter computer-controlled Newtonian, 4:82; Gary Seronik's 8-inch f/4.1 compact Dobsonian, 6:120

*Professional:* Calar Alto (3.5-meter), 4:32; Gemini North (8.1-meter), 4:38; Maksutov design, 6:58

***Very large-scale structure:*** 3:21; distribution of quasars, 2:20; 2dF project, 2:20

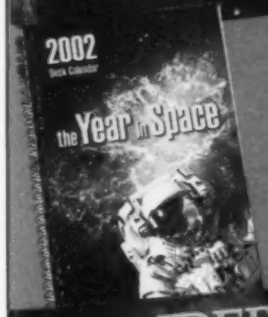
***X-ray astronomy:*** source of Milky Way's diffuse X-ray glow, 5:20; young cluster of stars, 4:22

*See the year in all its glory — on your wall or your desk!*

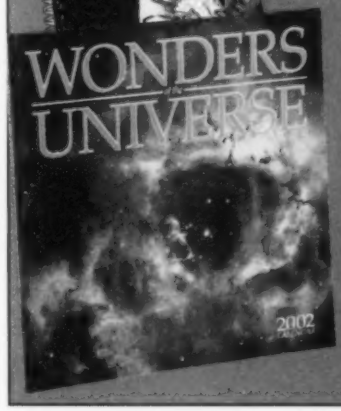
2002 Calendars

**Observer's Calendar 2002**
Royal Astronomical Society of Canada calendar with celestial images and listings of sky events.
*Opens to 12 ½ by 20 inches.*
**OC2002 ... $11.95** *plus shipping*

**Space Photos & Facts 2002 Desk/Wall Calendar**
Features a glorious color image of the cosmos for every day of the year. *368 pages (one page per day), 7 by 6 inches.*
**SPF02 ... $11.95** *plus shipping*




**The Year in Space 2002 Desk Calendar**
Handy reference calendar with 54 color photos and space-related information.
*120 pages, 6 by 9 inches, spiralbound.*
**WEEKLY02 ... $14.95** *plus shipping*




**Wonders of the Universe 2002 Calendar**
Wall calendar with 12 full-color images of terrestrial and celestial subjects.
*Opens to 12 by 24 inches.*
**WU2002 ... $12.95**
*plus shipping*

SKY & TELESCOPE
800-253-0245
www.skypub.com